

3D Biological Tissue Image Rendering Software

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Keywords: Research Tool, software, biological image volumes, 3D visualization, transfer function, tissue rendering.

Summary:

The Frederick National Laboratory for Cancer Research seek parties interested in collaborative research to co-develop software for the automatic 3-D visualization of biological image volumes.

Technology:

Available for commercial development is software that provides automatic visualization of features inside biological image volumes in 3D. The software provides a simple and interactive visualization for the exploration of biological datasets through dataset-specific transfer functions and direct volume rendering. The method employs a K-Means++ clustering algorithm to classify a two-dimensional histogram created from the input volume. The classification process utilizes spatial and data properties from the volume. Then using properties derived from the classified clusters, the software automatically generates color and opacity transfer functions and presents the user with a high quality initial rendering of the volume data. The user input can be incorporated through a simple yet intuitive interface for transfer function manipulation included in our framework. Our new interface helps users focus on feature space exploration instead of the usual effort intensive, low-level manipulation.

Potential Commercial Applications:

- Biological Tissue Visualization in 3D
- Research Use

Competitive Advantages:

- User Friendly
- Intuitive interface

Development Stage: Prototype.

Patent Status: Software. Research tool – Patent protection is not being pursued for this technology.

Contact:

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